

Appl. No. 10/089,315
Preliminary Amendment

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Please amend the claims as indicated below:

1. (Currently amended) A method for ~~protection of~~ protecting submerged ~~or partially submerged~~ marine surfaces from bio-fouling without external electrical power comprising:

directly spraying the surface to be protected with ~~a solvent free~~, a zinc or zinc based alloy coating produced by a an electric arc, combustion wire or combustion powder thermal spray process to thereby obtain a protective coating of said zinc or zinc based alloy on said surface to provide protection to said surface.

2. (Original) The method according to claim 1 wherein the coating is free of ~~tributyltin~~ tributyltin.

3. (Cancelled)

4. (Original) The method according to claim 1 wherein the surface is a metal member selected from the group consisting of carbon steel, aluminum, stainless steel, brass, copper, copper-nickel, monel, lead and bronze.

5. (Original) The method according to claim 1 wherein the coating is applied directly to the surface of the structure without any insulating layers.

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6. (Currently Amended) The method according to claim 1 wherein the surface is fiberglass, plastic, ~~concrete~~, composites, or wood.

7. (Currently Amended) The method for protecting ~~of a submerged~~ or partially submerged metal marine surfaces without external electrical power comprised of washing the surface to be protected with water to remove any soluble salts and biomass, blasting the metal surface to white metal, selecting a metal wire containing zinc or zinc alloy compatible with said surface, carrying out a an electric arc, combustion wire, or combustion powder thermal spray process to apply a zinc or zinc based coating to said surface to coat said surface with a zinc based coating and thereby achieve protection against bio-fouling.

8. (Cancelled)

9. (Original) The method according to claim 7 further comprising applying multiple layers by thermal spray to obtain a uniform coverage by the zinc or zinc based alloy on the said surface.

10. (Original) The method according to claim 4 further comprising optionally adding a sealer on top of the thermal spray coating.

11. (Currently Amended) The method according to claim 1 wherein a thermal spray metallized coating is deposited and composed of 50-100% zinc and wherein the amount of zinc in said coating depends on the surfaces to be coated.

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12. (Currently Amended) The method according to claim 9 wherein the zinc metal coating may additionally contains a member contain an element selected from the group consisting of copper, carbon, tin, nickel, aluminum, magnesium and mixtures thereof.

13. (Currently Amended) A method for cathodically protecting surfaces of submerged or partially submerged metallic marine structures which are to be placed underwater comprising, without external electrical power, thermally spraying said surfaces with ~~a solvent-free~~, a zinc or zinc based alloy coating.

14. (Original) The method according to claim 1 wherein said marine structure is the hull of a ship, ship hardware, buoys, locks, dam, off-shore oil rigs, piers, wharfs, bulk heads, pipelines and sea water intakes.

15. (Currently Amended) A marine structure which when in use is submerged or partially submerged in water having been coated by the method according to claim 1.

16. (Currently Amended) A submerged or partially submerged marine structure that has been coated according to the method of claim 13.

17. (Original) A propeller having been coated by the method of claim 1.

18. (Currently Amended) A submerged or partially submerged marine surface coated with the method according to claim 1.

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19. (New) A method for the protection of submerged or partially submerged marine surfaces from bio-fouling, to simultaneously provide barrier corrosion protection and cathodic protection to said surfaces without external electric power comprising:

directly spraying said surfaces to be protected with a zinc or zinc based alloy coating produced by an electric arc, combustion wire or combustion powder thermal spray process, to thereby obtain a protective coating of a zinc or zinc based alloy on said surfaces,

wherein said protective coating is 50-100% zinc and wherein the amount of zinc in said coating depends on the surface to be coated, and

when the coating is a zinc based alloy wherein the alloy may additionally contain an element selected from the group consisting of carbon, copper, tin, nickel, aluminum, magnesium and mixtures thereof.

20. (New) The method according to claim 19 where the marine surface to be protected is selected from the group consisting of carbon steel, aluminum, stainless steel, brass, copper, copper-nickel, monel, lead and bronze.

21. (New) The method according to claim 19 where the marine surface to be protected is fiberglass, plastic, composites or wood.

22. (New) The method according to claim 19 wherein the coating is produced by electric arc thermal spray process.

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23. (New) A marine structure which when in use is submerged or partially submerged in water having been coated by the method according to claim 19.